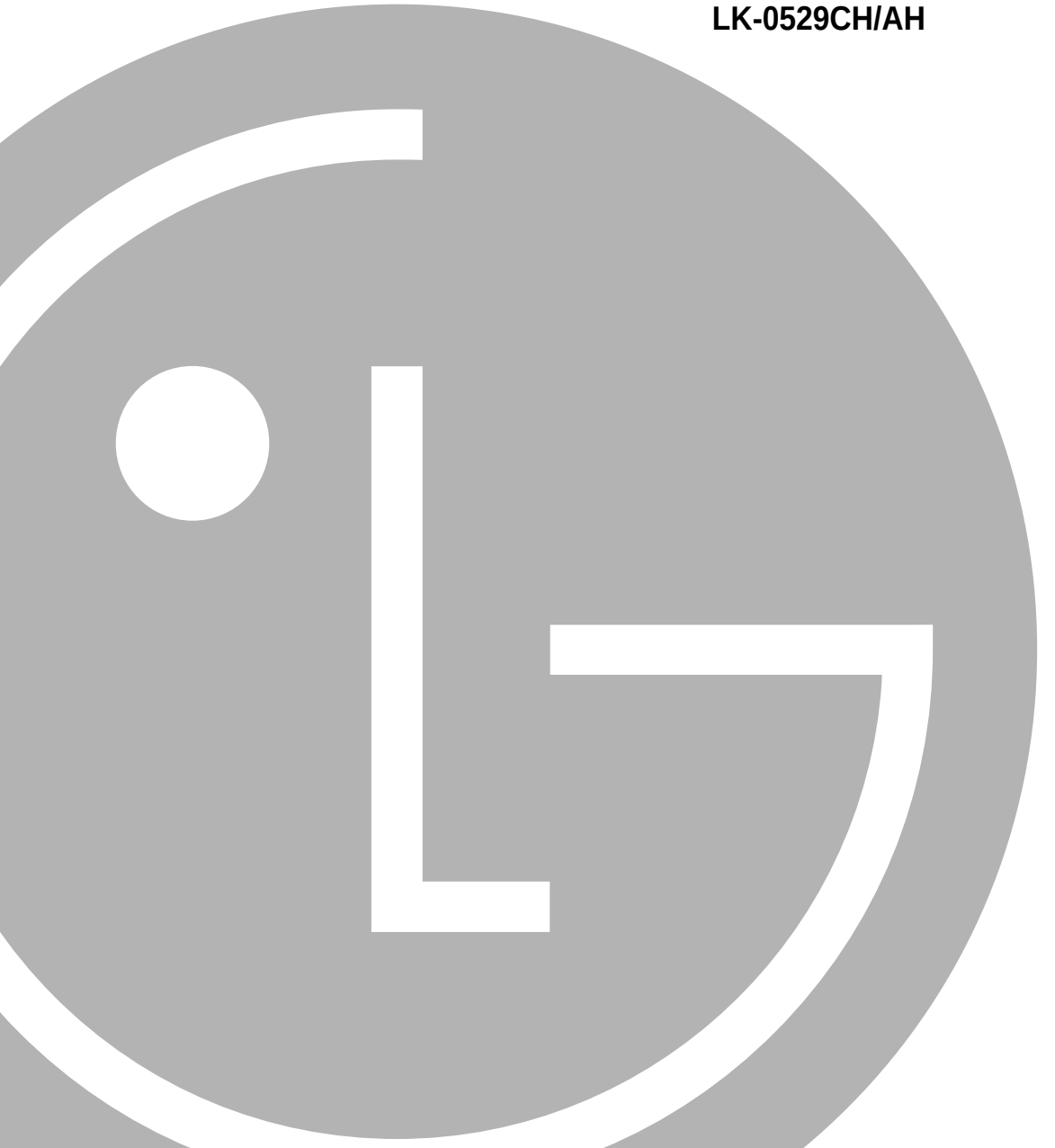
LG

LK-SM-101

Single Packaged Air Conditioner

SERVICE MANUAL

MODELS: LK-0329CH/AH
LK-0429CH/AH
LK-0529CH/AH



Contents

Model Number Nomenclature **3**

General Data **4**

Dimensions **5**

Refrigerant Circuit Diagram **6**

Wiring Diagram **7**

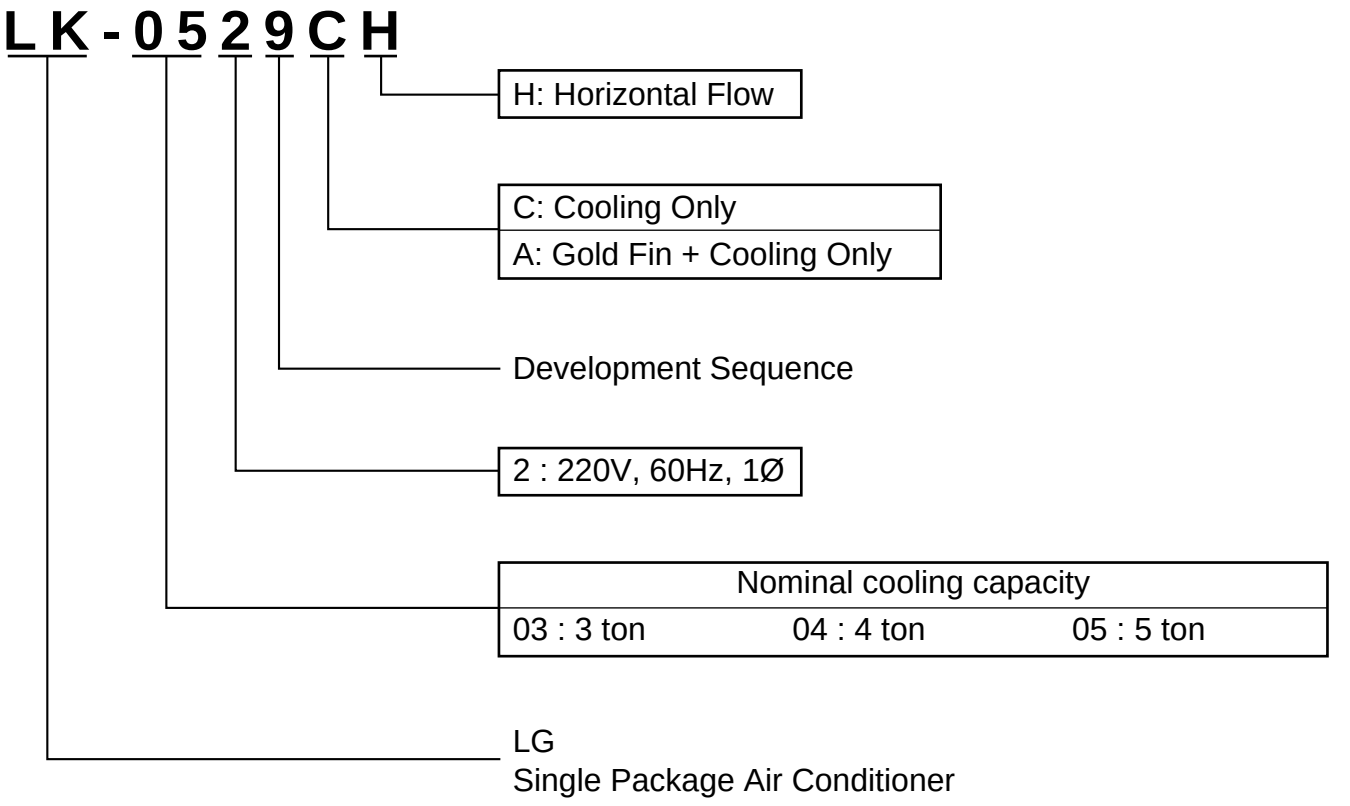
Troubleshooting Guide **8**

Features of Controller **14**

Exploded View and Replacement Parts List **15**

Specification of Components **18**

Model Number Nomenclature



General Data

Table-1

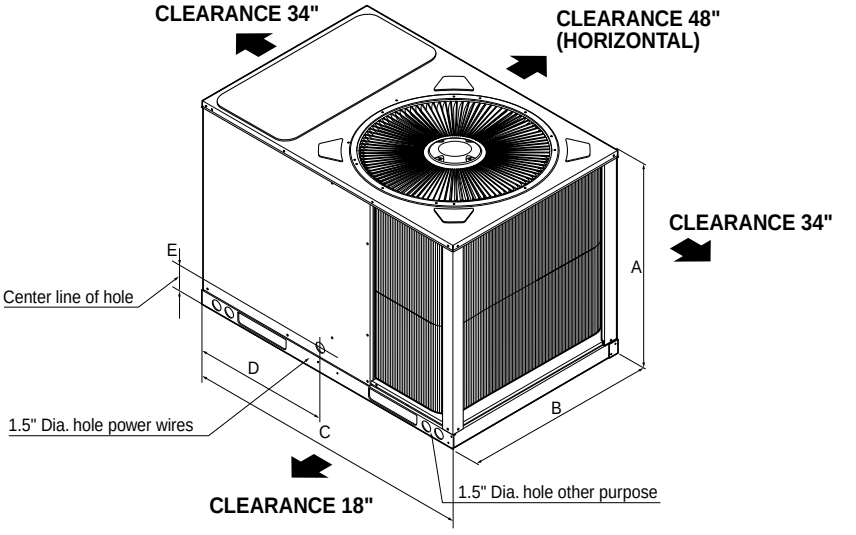
	Nominal ton		(Ton)	3	4	5
	Models			LK-0329CH/AH	LK-0429CH/AH	LK-0529CH/AH
Capacity	ARI Net Cooling Capacity		(BTU/hr)	35,000	47,000	57,000
			(Kcal/h)	8,821	11,845	14,364
Electrical Data	Voltage		(V,PH)	208~230V,1PH	208~230V,1PH	208~230V,1PH
	M.C.A(with standard motor)	Cooling	(Amps)	29	31	48
	Power Input	Cooling	(Watt)	3,740	4,350	6,000
Performance	Air Circulation	Nominal CFM	CFM	1,050	1,590	1,750
	SEER	Cooling	(BTU/hr.W)	10.0	11.0	10.0
	Sound Rating	Cooling	dB(A)	8	8.4	8.4
Features	LG Electronic Thermostat			Option	Option	Option
	Time Delay Safety Function			¥	¥	¥
	Cooling Operation Mode			¥	¥	¥
	Heating Operation Mode(with E/Heater)			¥	¥	¥
	Soft Dry Operation			-	-	-
	Timer Setting (24-Hour on/off)			-	-	-
	Auto restart mode			-	-	-
	Humidifier function			-	-	-
	Test function			-	-	-
	Self-Diagnosis Function			-	-	-
	Filter type			-	-	-
Compressor	Type			Scroll	Scroll	Scroll
	Quantity			1	1	1
Outdoor Coil	Type			High efficiency	High efficiency	High efficiency
	Tube size(O.D)		(inch)	9/32	9/32	9/32
			(mm)	7.00	7.00	7.00
	Row/FPI			1R/18FPI	2R/18FPI	2R/18FPI
	Lengh		(inch)	55 1/8	55 1/8	55 1/8
			(mm)	1,400	1,400	1,400
	Face area		(sq.ft)	10.72	10.72	10.72
			(m^2)	1.00	1.00	1.00
Indoor Coil	Type			High efficiency	High efficiency	High efficiency
	Tube size(O.D)		(inch)	3/8	3/8	3/8
			(mm)	9.52	9.52	9.52
	Row/FPI			2R/18FPI	3R/18FPI	3R/18FPI
	Lengh		(inch)	21 5/8	21 5/8	21 5/8
			(mm)	550	550	550
	Face area		(sq.ft)	4.51	4.51	4.51
			(m^2)	0.42	0.42	0.42
Outdoor Fan	Type			Propeller	Propeller	Propeller
	No. Used/Diameter(in.)			1EA/22"	1EA/22"	1EA/22"
	Drive Type			Direct	Direct	Direct
	CFM			3,500	3,500	3,500
	No. Motor/Motor output(Hp)			1/0.33	1/0.33	1/0.33
	Motor RPM			1,060	1,060	1,060
Indoor Fan	Type			Centrifugal Blower Fan	Centrifugal Blower Fan	Centrifugal Blower Fan
	No. Used			1EA	1EA	1EA
	Diameter/Width(in.)			11"/11"	11"/11"	11"/11"
	Drive Type/Motor Step			Direct/3	Direct/3	Direct/3
	No.motors			1EA	1EA	1EA
	Motor output(standard/oversized)			0.5Hp/N.A	0.75Hp/N.A	0.75Hp/N.A
	Motor rpm(Standard/oversized)			840N.A	1,020/N.A	1,090/N.A
Drain Connection Size(in.)				3/4"	3/4"	3/4"
Refrigerant	Refrigerant Charge		(kg)	1.7	2.2	2.3
			(lbs)	3.75	4.85	5.07
			Type	R-22	R-22	R-22
	Refrigerant Control			Capillary Tube	Capillary Tube	Capillary Tube
Dimensions	Indoor unit (WxHxD)		(inch)	43 3/8*28 9/16*32 11/16	43 3/8*28 9/16*32 11/16	43 3/8*28 9/16*32 11/16
			(mm)	1102*725*830	1102*725*830	1102*725*830
Weight	Net		(kg)	110	120	140
			(lbs)	242.5	264.6	308.6

Dimensions

LK-0329CH/AH, LK-0429CH/AH, LK-0529CH/AH

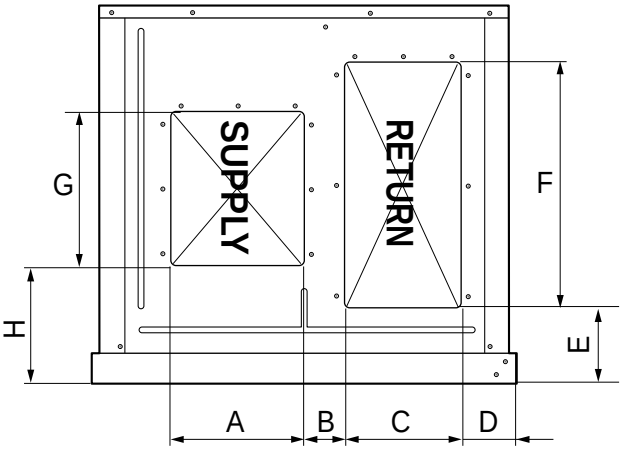
Unit : Inch(mm)

A	$28^{9}/_{16}$ (725)
B	$32^{11}/_{16}$ (830)
C	$43^{3}/_{8}$ (1102)
D	$20^{11}/_{16}$ (525)
E	$2^{7}/_{8}$ (73)



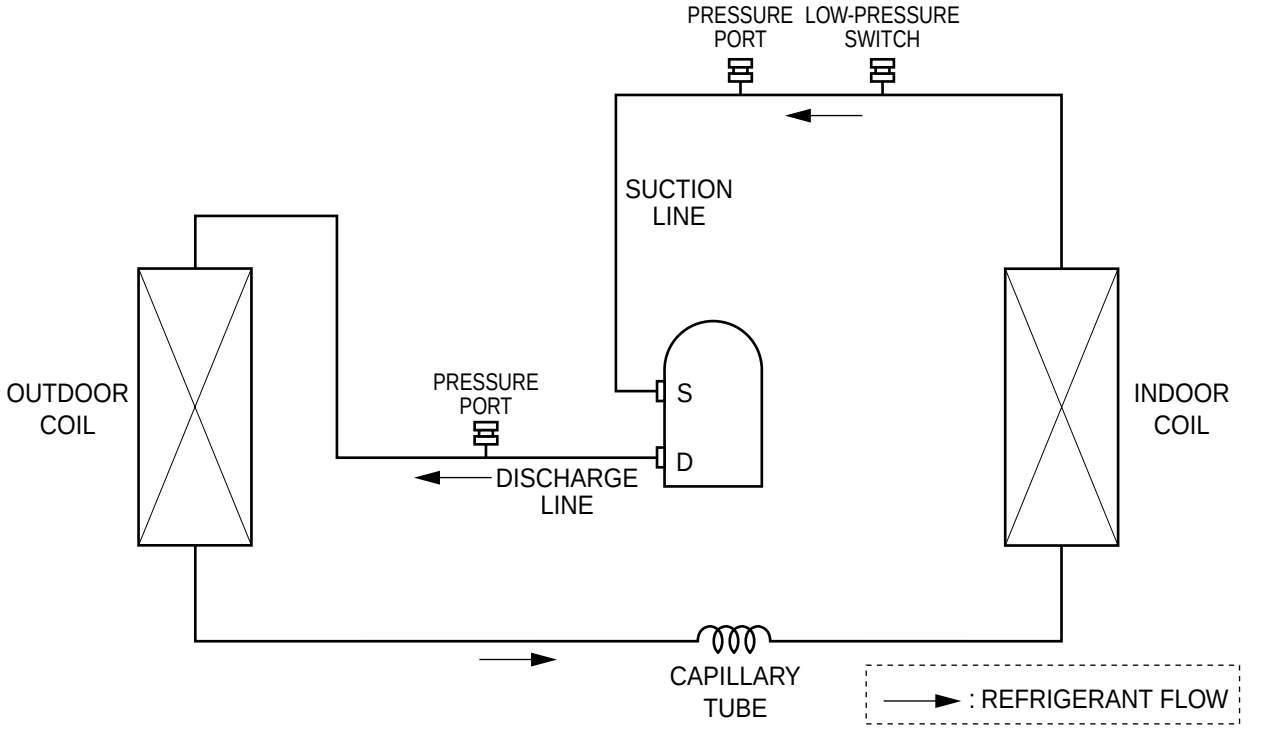
Unit : Inch(mm)

A	$13^{3}/_{16}$ (335)
B	$1^{1}/_{2}$ (38)
C	$9^{1}/_{2}$ (242)
D	$^{3}/_{4}$ (19)
E	$5^{5}/_{8}$ (143)
F	$24^{1}/_{4}$ (622)
G	$11^{9}/_{16}$ (294)
H	$9^{1}/_{16}$ (230)



Refrigerant Circuit Diagram

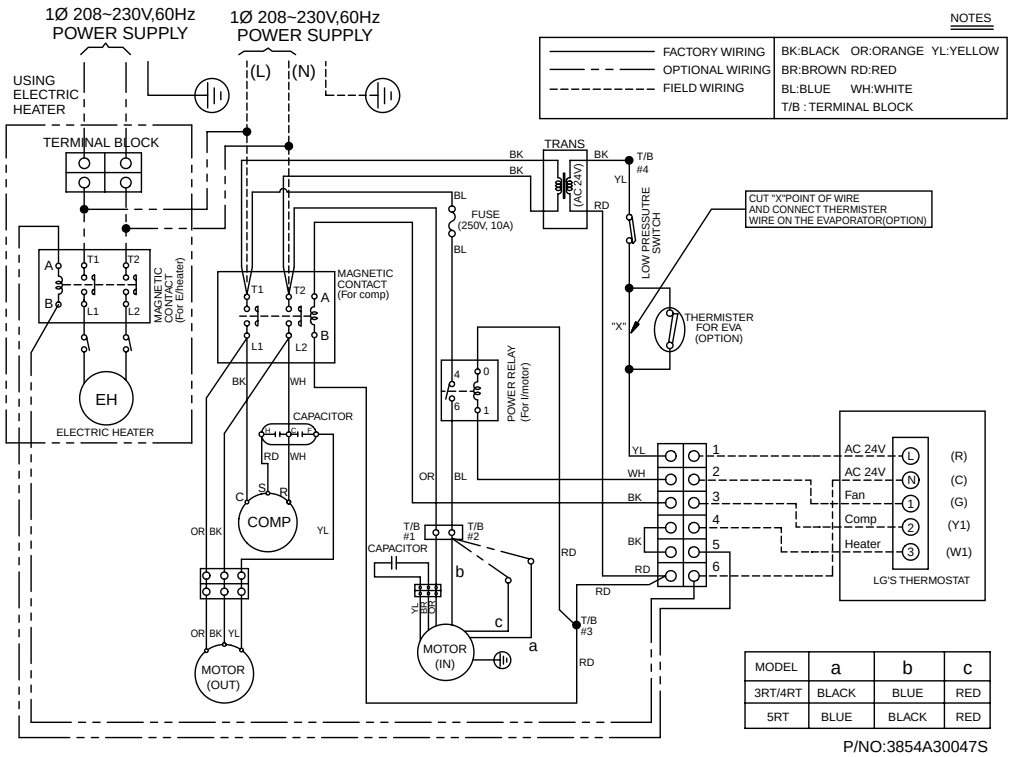
LK-0329CH/AH, LK-0429CH/AH, LK-0529CH/AH



Wiring Diagram

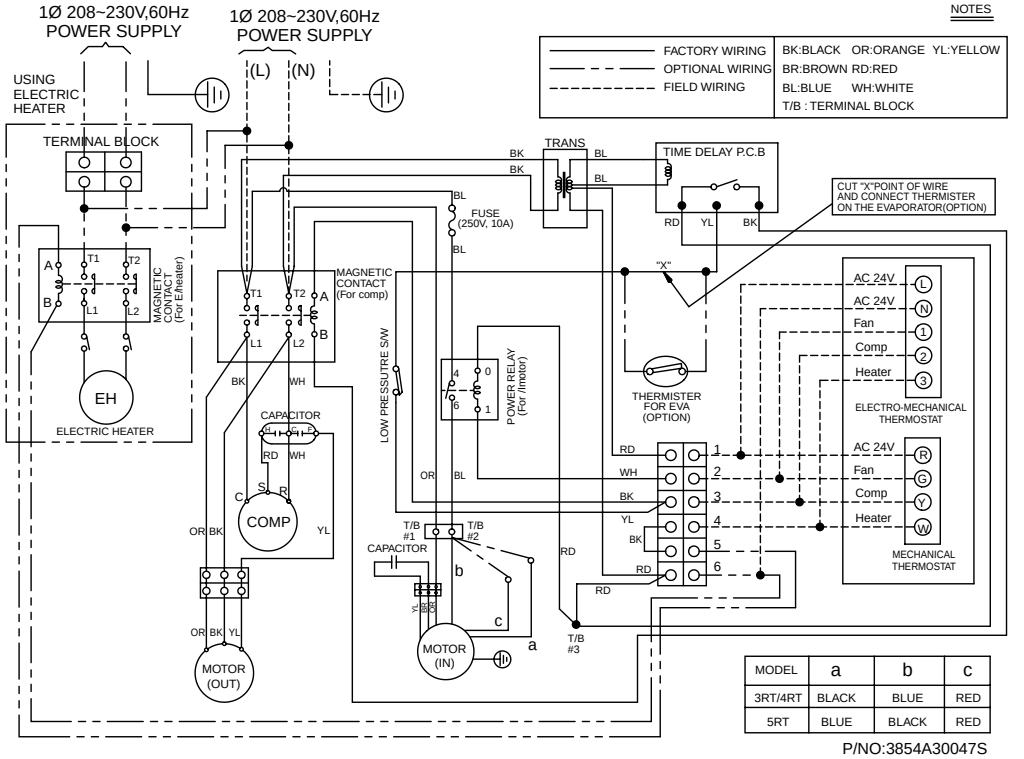
LK-0329CH/AH, LK-0429CH/AH, LK-0529CH/AH

DIAGRAM WIRING(WITH LG'S THERMOSTAT)



P/NO:3854A30047S

DIAGRAM WIRING(WITH LOCALLY PURCHASED THERMOSTAT)

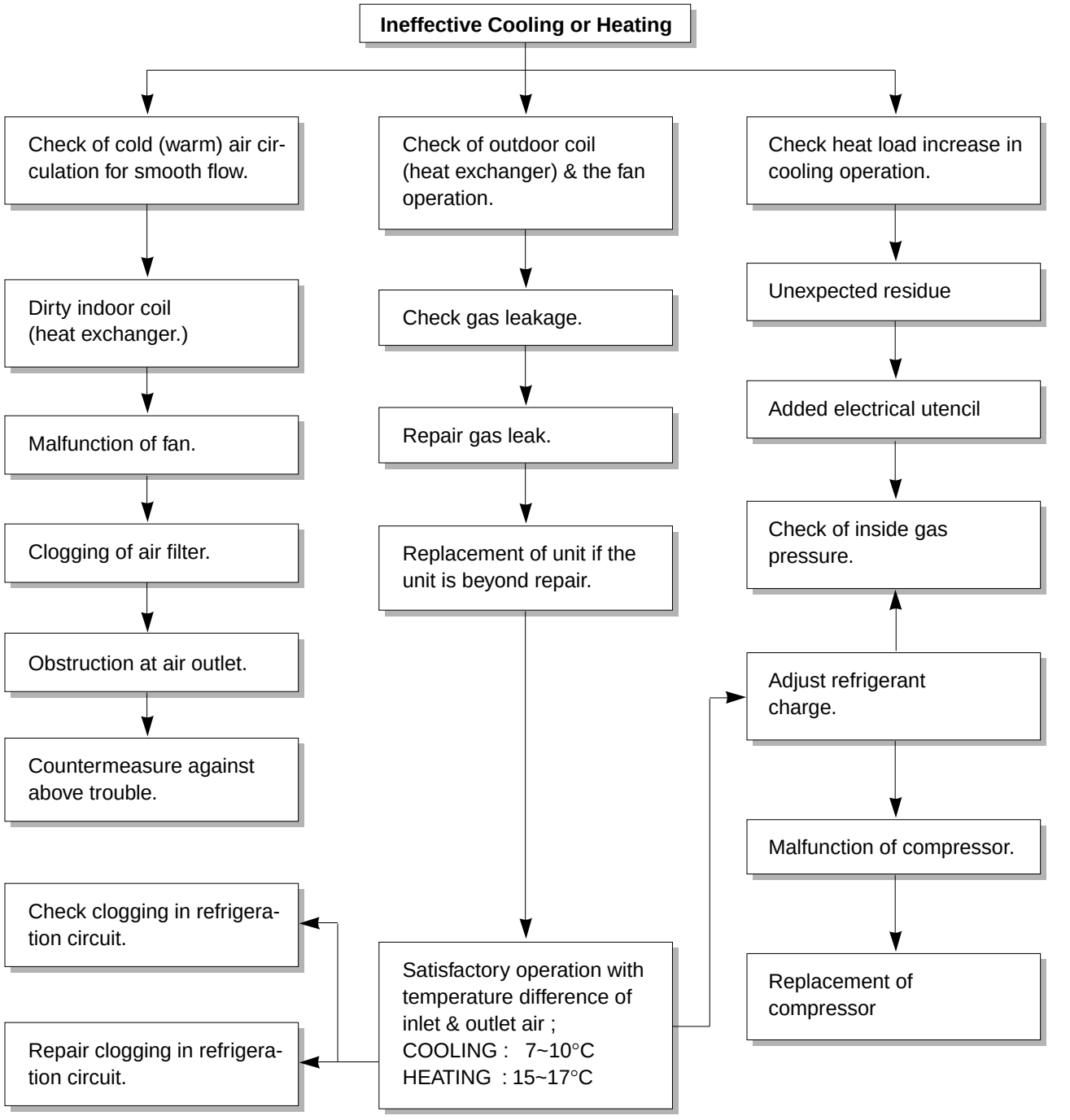


P/NO:3854A30047S

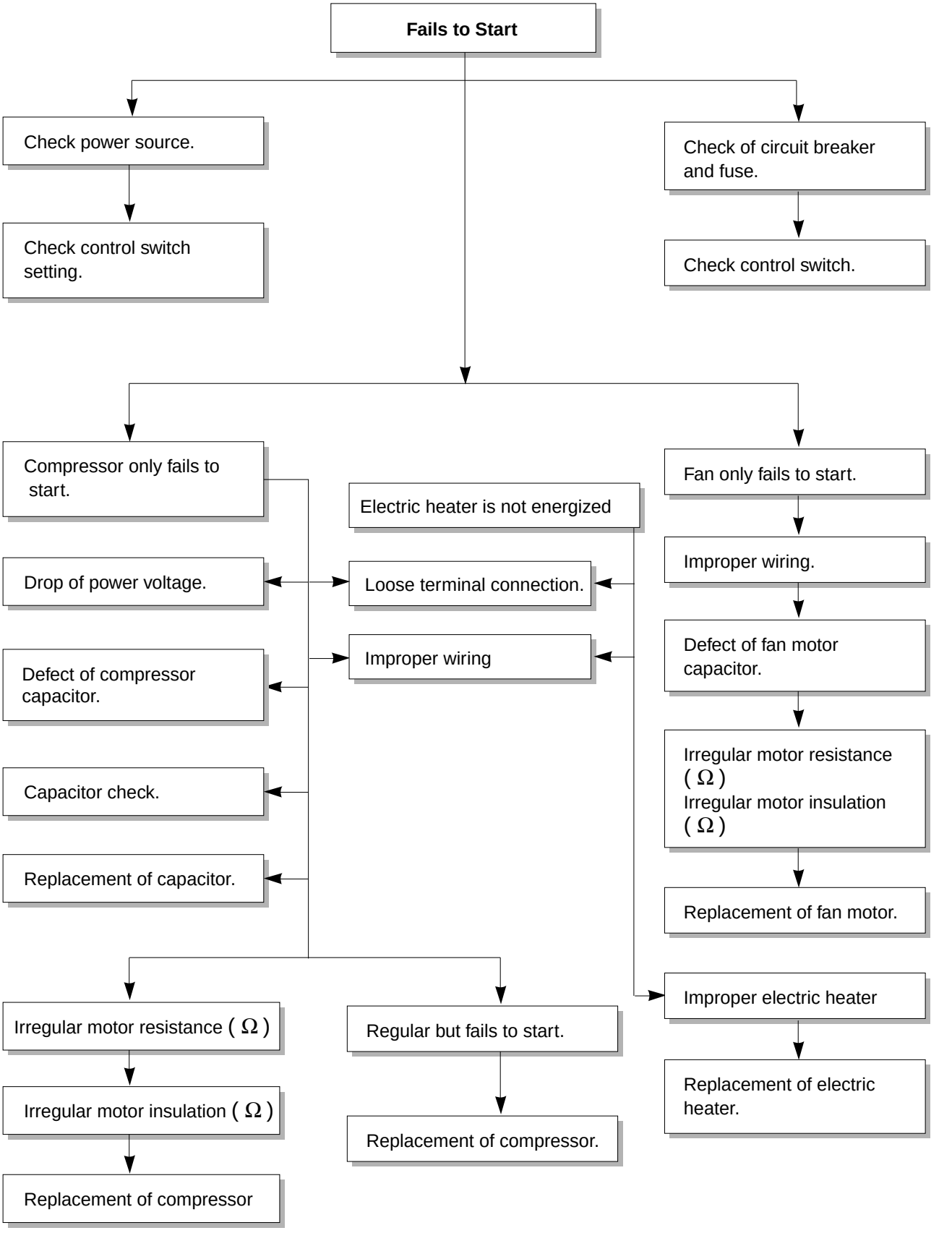
Troubleshooting Guide

In general, possible trouble is classified in two causes.
The one is called **Starting Failure** which is caused from an electrical defect, and the other is **Ineffective Air Conditioning** caused by a defect in the refrigeration circuit and improper application.

Unit runs but ineffective cooling


Ineffective Cooling or Heating
Check of cold (warm) air circulation for smooth flow.
Dirty indoor coil (heat exchanger.)
Malfunction of fan.
Clogging of air filter.
Obstruction at air outlet.
Countermeasure against above trouble.
Check of outdoor coil (heat exchanger) & the fan operation.
Check gas leakage.
Repair gas leak.
Replacement of unit if the unit is beyond repair.
Check heat load increase in cooling operation.
Unexpected residue
Added electrical utencil
Check of inside gas pressure.
Adjust refrigerant charge.
Malfunction of compressor.
Replacement of compressor
Check clogging in refrigeration circuit.
Repair clogging in refrigeration circuit.
Satisfactory operation with temperature difference of inlet & outlet air ;
COOLING : 7~10°C
HEATING : 15~17°C

Troubleshooting Guide


Fails to Start
Check power source.
Check control switch setting.
Check of circuit breaker and fuse.
Check control switch.
Compressor only fails to start.
Drop of power voltage.
Defect of compressor capacitor.
Capacitor check.
Replacement of capacitor.
Irregular motor resistance (Ω)
Irregular motor insulation (Ω)
Replacement of compressor
Electric heater is not energized
Loose terminal connection.
Improper wiring
Regular but fails to start.
Replacement of compressor.
Fan only fails to start.
Improper wiring.
Defect of fan motor capacitor.
Irregular motor resistance (Ω)
Irregular motor insulation (Ω)
Replacement of fan motor.
Improper electric heater
Replacement of electric heater.

Troubleshooting Guide

PACKAGE AIR CONDITIONER VOLTAGE LIMITS

NAME PLATE RATING	MINIMUM	MAXIMUM
208~230V	187V	253V

1. No cooling and heating operation performed

1) Both the blower and the compressor do not work

WHAT TROUBLED	COMPLAINTS	HOW TO CHECK	REMEDY
Other parts except the unit	• Electric supply interrupted • Defective power wiring • Cut off power fuse	Measure power supply with a tester in case that the same power source is supplied to other equipment except the unit, what and where troubled can be discovered by checking the operation of other equipment.	• Repair a switch box and relative instrument. • Replacement of fuse • Request a power supplier to repair.
	Too low voltage	Measure it with a tester.	Check the power source. Use a thick cable if necessary.
Magnetic switch for compressor & fan motor	Control point is on condition of "OFF" due to trouble.	Make short-circuit, then measure it with tester.	Replace it if necessary.
Operating switch	Troubled or defective contactor	Check it with the eyes or tester.	Repair or replace it.

2) Only Indoor blowers do not work

WHAT TROUBLED	COMPLAINTS	HOW TO CHECK	REMEDY
Motor	• Over heated • Wiring short	Check it with tester	Repair or replace it.
Capacitor	Defected	Check it with a tester.	Replace it.
Electric wiring	• Cut- OFF of wiring • Short circuited on operation	Check it with a tester.	Rewiring or Repair.

Troubleshooting Guide

3) Only outdoor fan does not work

WHAT TROUBLED	COMPLAINTS	HOW TO CHECK	REMEDY
Motor	• Over-heated • Wire short	Check how it is insulated.	Repair or replace it.
Electric Wiring	Cut off of wiring	Check it with a tester.	Rewiring or repair.
	Short circuited on operation		

4) Only compressor does not work

WHAT TROUBLED	COMPLAINTS	HOW TO CHECK	REMEDY
Magnetic switch for compressor motor	Defective contact, magnetic coil troubled.	Check it with the eyes on with a tester.	Repair or replace it.
Compressor motor	Troubled over-heated (layer short)	Check how it is insulated.	Replace or repair the compressor.
High pressure switch (Option part)	Troubled or defective contact or operating	Check it with a tester.	Replace it if neces-sary.
Electric circuit	Defective connection or disconnection of the circuit for compressor.	Check it with a tester.	Rewiring or push reset button.

Troubleshooting Guide

2. The Units discontinue after the operation started

WHAT TROUBLED	COMPLAINTS	HOW TO CHECK	REMEDY
Outdoor coil	Coil is dirty *1	Checking	Wash it by means of something like chemical washing.
In-condensable gas blended.	Air intruded into the refrigerant pipe line *1	In the event that difference between the saturating temperature corresponding to high pressure and the temperature of air discharged from the outdoor coil is more than 15°C, incondensable gas may be blended.	Extract air by vacuum pump, then replenish (charge) the refrigerant.
High pressure switch (Option part)	Improper adjustment	Check it with a pressure gauge.	Read just it to normal operating pressure. (Note) Don't alternate the specified adjusting pressure. If the adjusted pressure exceed the specified range, it will cause a great accident.
Refrigerant	A shortage of refrigerant amount. * 2	Check pressure	Replenish the refrigerant. Repair the spot where it is leaked.
Outdoor Fan	Reverse rotation of fan Obstacle Air short circuit *1	Confirm the wind blowing out upward. Check it with eyes.	If reversed, connect interchanged wires to each terminal. Power wirings.

Note: Use an appropriate measuring instrument for readjustment.

*1: High-pressure switch moves.

*2: Low- pressure switch moves.

Troubleshooting Guide

3. The unit is working, but not cooling and heating sufficiently (Both blower and compressor are working)

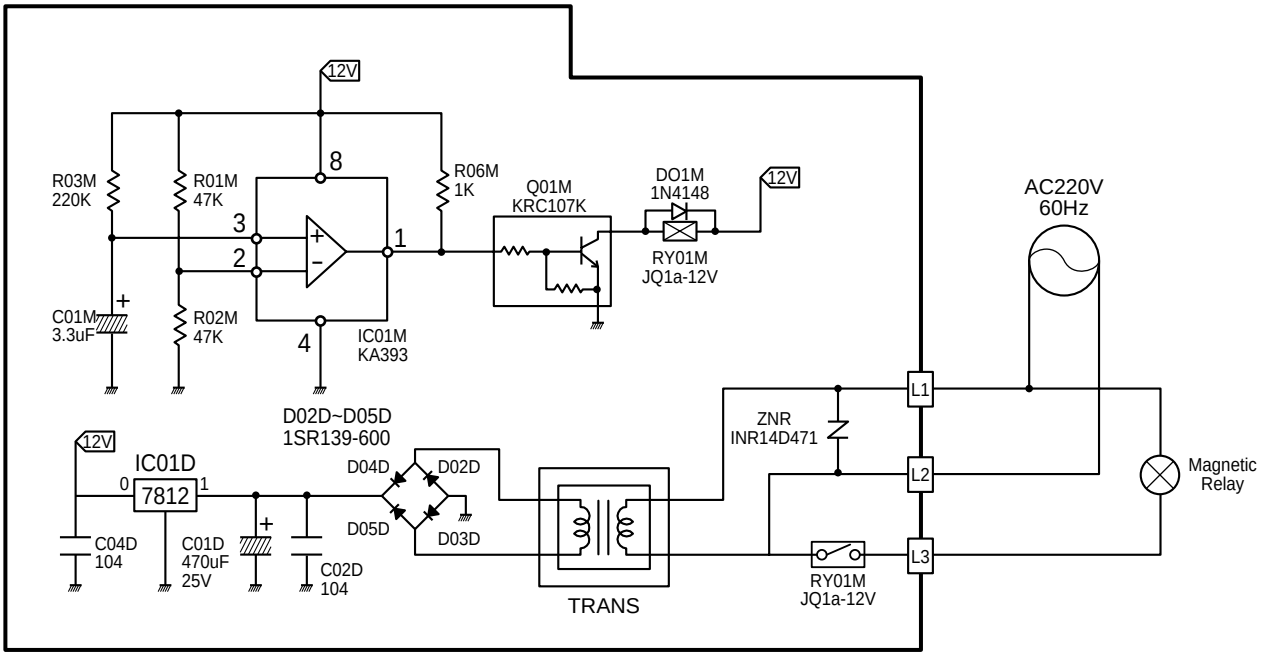
WHAT TROUBLED	COMPLAINTS	HOW TO CHECK	REMEDY
Load	Much Cooling or Heating load	Heat load increased. Window or door has many cracks or gaps.	Do necessary disposal respectively.
Air flow	Obstacle disturbs Intake of uniform airflow.	Checking	Correct it.
Short air volume	Reverse rotation of blower.	Checking	Correct it.
Refrigerant	Shortage in the charged refrigerant.	Coil inlet pipe is frosted	Recharge it. (Repair the leakage spot).
Air passage	Improper or foreign bodies	Checking	Correct or clear the foreign bodies.
Air filter	Clogged with dust	Checking	Cleaning

4. All the functions are performed as specified, but very noisy and vibrant

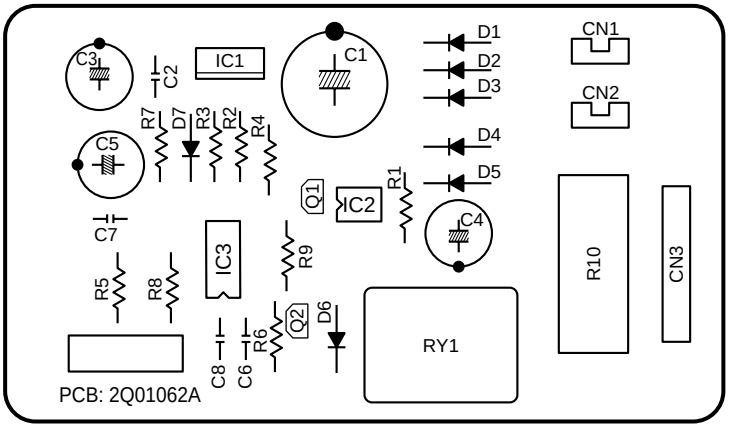
WHAT TROUBLED	COMPLAINTS	HOW TO CHECK	REMEDY
Compressor	Liquid refrigerant flooding back from the evaporator.	• Check for refrigerant over-charge. • Check to see if the intake air temperature is extremely cold. • Check for insufficient air flow quantity.	
	Faulty Discharge valve and suction valve.	• Checking	• Replace the compressor
Blower	Fan broken. Foreign matters intruded.	Checking	Repair or replace it. Clear the foreign bodies.
Screws	Looseness or fail-off of screws	Checking	Correct
Electric troubles (Magnetic contactor)	Defective contact. Defective contact point. Rusting and foreign matters in the iron core contact face. Defective contact of the operating switch.	Checking	Repair and clean or replace it.
Others	Improper installation	Checking	Correct it.

Features of Controller

1. Timer PCB Circuit Diagram



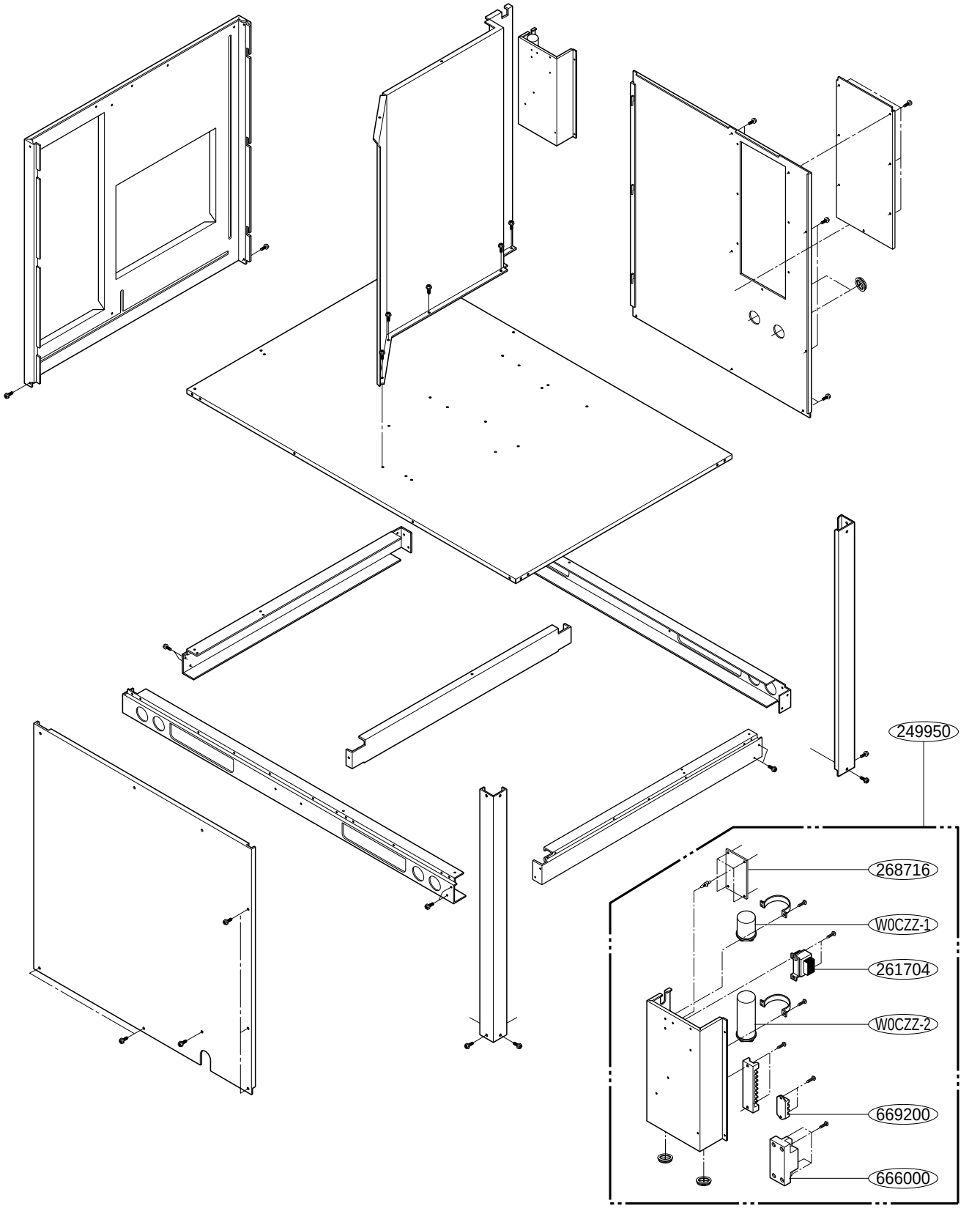
2. Timer PCB ASSY



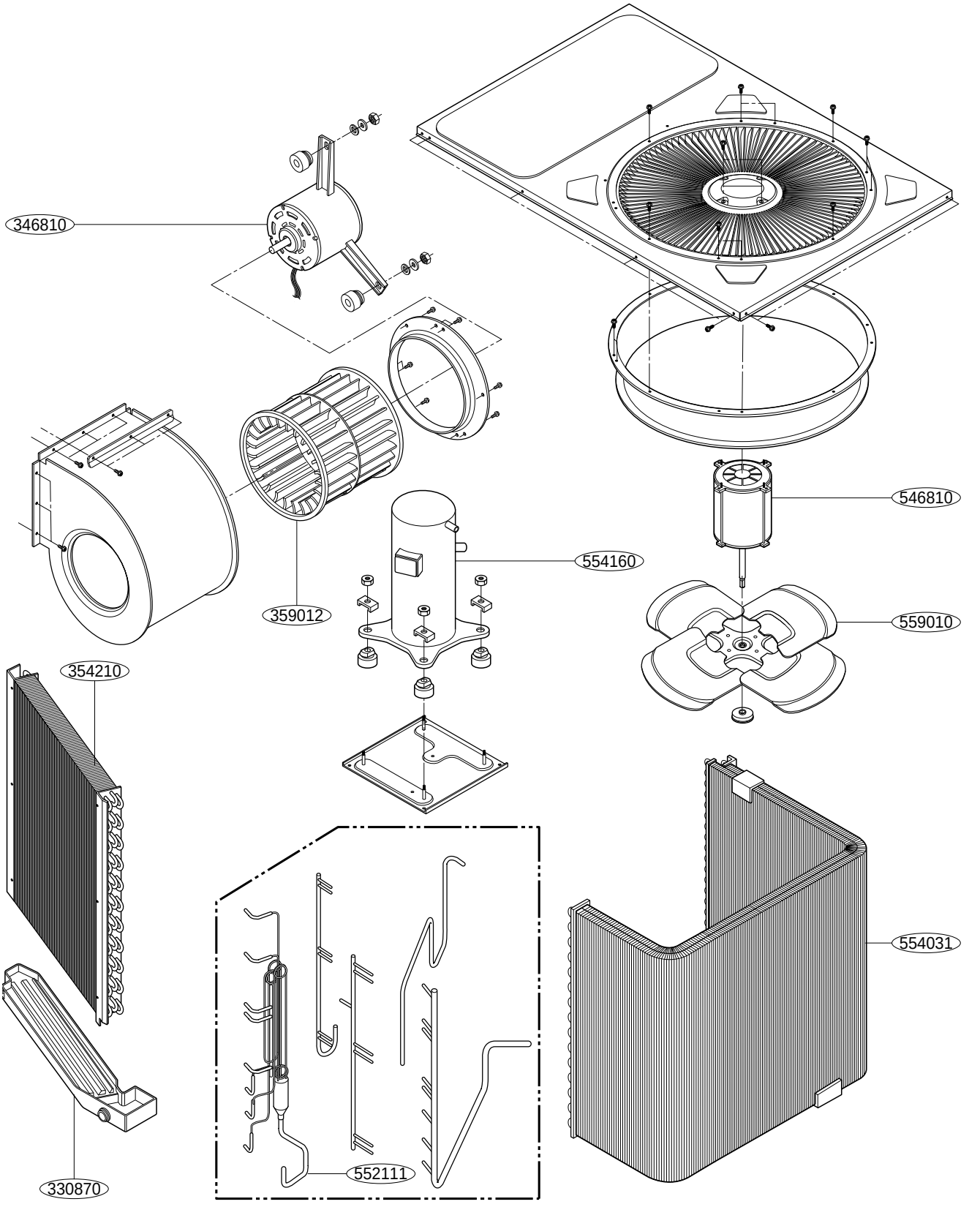
Exploded View and Replacement Parts List

1. LK-0329CH/AH, 0429CH/AH, 0529CH/AH

• Exploded View



Exploded View and Replacement Parts List



Exploded View and Replacement Parts List

Replacement Parts List

LOCATION NO.	DESCRIPTION	P/NO.						REMARKS
		LK-0329CH	LK-0329AH	LK-0429CH	LK-0429AH	LK-0529CH	LK-0529AH	
249950	CONTROL BOX ASSY, SINGLE	4995A10060B	4995A10060B	4995A10060A	4995A10060A	4995A10060E	4995A10060E	R
261704	TRANSFORMER, POWER	6170A10001E	6170A10001F	6170A10001E	6170A10001F	6170A10001E	6170A10001F	R
268716	TIMER	3Q010117C	3Q010117C	3Q010117C	3Q010117C	3Q010117C	3Q010117C	R
346810	MOTOR ASSY, INDOOR	4681A20057C	4681A20057C	4681A20057B	4681A20057B	4681A20057B	4681A20057B	R
354210	EVAPORATOR ASSY, FIRST	5421A10002T	5421A10002T	5421A10002S	5421A10002S	5421A10002S	5421A10002S	R
359012	FAN ASSY, BLOWER	2A00578V	2A00578V	2A00578V	2A00578V	2A00578V	2A00578V	R
546810	MOTOR ASSY, OUTDOOR	4681A20039B	4681A20039B	4681A20039B	4681A20039B	4681A20039B	4681A20039B	R
554031	CONDENSER ASSY, BENT	5403A10021A	5403A10021B	5403A10019A	5403A10019B	5403A10019A	5403A10019B	R
554160	COMPRESSOR ASSY, FINAL	2520UFDK1AA	2520UFDK1AA	2520UFJK1AA	2520UFJK1AA	5416A10002B	5416A10002B	R
559010	FAN ASSY, PROPELLER	5901A10010A	5901A10010A	5901A10010A	5901A10010A	5901A10010A	5901A10010A	R
566000	SWITCH, PRESSURE	6600A20004D	6600A20004D	6600A20004D	6600A20004D	6600A20004D	6600A20004D	R
666000	SWITCH, MAGNET	2A00771F	2A00771F	2A00771F	2A00771F	2A00771F	2A00771F	R
669200	RELAY	6920AP3194B	6920AP3194B	6920AP3194B	6920AP3194B	6920AP3194B	6920AP3194B	R
W0CZZ-1	CAPACITOR, DRAWING	0CZZA20001B	0CZZA20001B	0CZZA20001B	0CZZA20001B	0CZZA20001B	0CZZA20001B	R
W0CZZ-2	CAPACITOR, DRAWING	6120AR2194K	6120AR2194K	6120AR2359U	6120AR2359U	0CZZA10001A	0CZZA10001A	R
552111	TUBE ASSY, CAPILLARY	5211A10268A		521110250A		5211A10270A		R
		5211A10268B(WITH TROPICAL CYCLE)		5211A10268B(WITH TROPICAL CYCLE)		-		R
330870	DRAIN PAN ASSY	3087A10017A						R
738290	OWNERS MANUAL	3828A20228A(SPANISH WITH NOM)						R
		3828A20228B(ENGLISH)						R
		3828A20228C(SPANISH + ENGLISH)						R
		3828A20228G(ENGLISH +ARABIC)						R
		3828A20228L(SPANISH FOR MIRAGEL)						R
738281	SERVICE MANUAL	3828A20220B	3828A20220B	3828A20220B	3828A20220B	3828A20220B	3828A20220B	R
267110	REMOTE CONTROLLER ASSEMBLY	6711A20063A(OPTION PART)						R
267110	REMOTE CONTROLLER ASSEMBLY(WIRELESS)	6711A20041R(OPTION PART)						R

Specification of Components

		LK-0329CH/AH	LK-0429CH/AH	LK-0529CH/AH
COMP	P/No.		2520UFJK1AA	5416A10002B
	Model name	SQ032KAA	SQ042KAA	H20R583ABCA
	*RLA	14.0	17.1	28
	**LRA	74	102	165
	Q'ty	1	1	1
INDOOR MOTOR	P/No.	4681A20057C	4681A20057B	4681A20057B
	Output	0.5Hp	0.5Hp	0.5Hp
	Shaft Dia.	15 mm	15 mm	15 mm
	RPM	840(Hi)	1,020(Hi)	1,090(Hi)
OUTDOOR MOTOR	P/No.	4681A20039B	4681A20039B	4681A20039B
	Output	0.33 Hp	0.33 Hp	0.33 Hp
	Shaft Dia.	15 mm	15 mm	15 mm
	RPM	1,050	1,050	1,050
	Q'ty	1	1	1
OUTDOOR FAN	P/No.	5901A10010A	5901A10010A	5901A10010A
	Diameter	O.D. 560mm	O.D. 560mm	O.D. 560mm
INDOOR BLOWER	P/No.	2A00578V	2A00578V	2A00578V
	Diameter*Width	280(mm) × 280(mm)	280(mm) × 280(mm)	280(mm) × 280(mm)
LOW PRESSURE SWITCH	P/No.	6600A20004D	6600A20004D	6600A20004D
	Spec.	OFF:2.0kgf/cm^2/ON:3.5kgf/cm^2	OFF:2.0kgf/cm^2/ON:3.5kgf/cm^2	OFF:2.0kgf/cm^2/ON:3.5kgf/cm^2
	Rated volt.	AC 24	AC 24	AC 24
	Maker	SAGINOMIYA	SAGINOMIYA	SAGINOMIYA
CAPACITOR for COMP.	P/No.	6120AR2194K	6120AR2359U	0CZZA10001A
	Spec.	45μF/400VAC	60μF/400VAC	55μF/400VAC
CAPACITOR for ***IDM.	P/No.	0CZZA20001B	0CZZA20001B	0CZZA20001B
	Spec.	15μF/450VAC	15μF/450VAC	15μF/450VAC
CAPACITOR for ****ODM.	P/No.	6120AR2194K	6120AR2359U	0CZZA10001A
	Spec.	6μF/400VAC	6μF/400VAC	6μF/400VAC
CAPILLARY TUBE	P/No.	3E92334G	3E92334M	3H02633K
	Spec.	ID 1.4 × L1200(mm)	ID 1.4 × L1000(mm)	ID 1.4 × L750(mm)
	Q'ty	5	8	8
TRANSFORMER	P/No.	6170A10001E	6170A10001E	6170A10001E
	Spec.	AC220V, 450mA	AC220V, 450mA	AC220V, 450mA
CONTACTOR for COMP.	P/No.	2A00771F	2A00771F	2A00771F
	Spec.	40A, 24V CONTROL	40A, 24V CONTROL	40A, 24V CONTROL
RELAY for IDM.	P/No.	6920AP3194B	6920AP3194B	6920AP3194B
	Spec.	AC 24V, 25A	AC 24V, 25A	AC 24V, 25A
RELAY for ODM.	P/No.	2A00771F	2A00771F	2A00771F
	Spec.	40A, 24V CONTROL	40A, 24V CONTROL	40A, 24V CONTROL

*RLA : RATED LOAD AMPERE
**LRA : LOCKED ROTOR AMPERE
***IDM : INDOOR MOTOR
****ODM : OUTDOOR MOTOR

LG Electronics Inc.

May, 2002
P/No.: 3828A20220B
Printed in Korea